UNITED STATES DEPARTMENT OF AGRICULTURE

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MEMORANDUM FOR REGIONAL FORESTER

ENTOMOLOGICAL RESULTS OF THE 1934 THINNING OPERATIONS - REGION 5

by

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Berkeley, California
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MEMORANDUM FOR REGIONAL FORESTER

SUBJECT:- Entomological Results of the 1934 Thinning Operations.
Region 5

Although it was impossible to inspect all the project areas in the Region during 1935 to determine the importance of insect attacks following thinning, it is considered advisable to place on record the results of such examinations as have been made. The areas covered by those examinations include :- North and Southern Warner areas on the Modoc National Forest; Slagger Creek and Pilgrim Creek on the Shasta; Lasco on the Lassen; and French Creek, Meadow Valley, Massack, Taylor Creek, Mabie and Burnam on the Plumas National Forest. These and other areas were examined in 1934. At that time it was evident that insects were infesting the cut material. It also was evident that some infestation in leave trees had occurred. How much injury would be caused could not be determined at the time the 1934 infestations were made.

The results of the 1935 examinations are as follows:-

SHASTA NATIONAL FOREST

No infestation of any importance could be directly attributed to the results of the thinning. Here and there a single dead leave tree was found, but they were not abundant. Very little emergence of Ips or western pine beetle resulted from the infestation in the cut poles.

To the west of Pilgrim Creek a group of about 50 poles, ranging in size up to 18 inches DBH, were found to be infested by the western pine beetle. Apparently this infestation started soon after the thinning work began. Successive broods of beetles had enlarged the group and were still working in trees in the immediate vicinity. It was found that Ips infestations occurred in the tops of the infested poles. Larger trees outside the thinning area showed an unusual amount of topkilling - presumably the result of engraver beetle attack. These infestations, although they may possibly be the results of the thinning work, and due to emergence from the cut material, cannot be traced with any certainty to the conditions resulting from the thinning operation.

MODOC NATIONAL FOREST

No injury of a serious nature was found in either of the two thinning areas examined. A few small groups of reproduction having diameters at the base up to 4 inches, were infested by Ips or had been killed following other injury. All the infested trees seen were jeffrey pine. Some damage and infestation resulted from the burning of brush piles, but it was not of much importance.

LASSEN NATIONAL FOREST

But four small groups of trees of from 8 to 12 inches in

diameter were found infested on this area. Some other single leave trees were killed. Infestation occurred chiefly in groups from which trees of about the same size had been cut. Infestation was almost entirely in ponderosa pine and was the result of attack by Ips and the western pine beetle. Figure 1 shows group injury of the type mentioned. The chief cause for apprehension is the fact that dominant poles that were fairly well advanced in growth, succumbed to the attack.

It was noted that little emergence resulted from infestation of the cut material. No new attacks were found in the thinned area. All trees that were infested, apparently were attacked by the same seasonal broods that infested the cut material. The death of leave trees in this area may be attributed to attraction to the slash. This resulted in concurrent attack and infestation of leave trees and slash.

PLUMAS NATIONAL FOREST

In 1934 examination of the sugar pine leave trees on the French Creek area showed that many were being attacked by the mountain pine beetle. At that time it appeared that most of those would die because of the apparent vigor of the attack and the abundance of the insects. No dead trees were seen this year that died as a result of the mountain pine beetle attacks. Examination showed that the trees had recovered from the attacks and had grown over the brood burrows. The insects produced no broods in those trees.

Examination of the Meadow Valley, Massack, Taylor Creek and Mabie areas showed that very little insect activity had followed the thinning work. Practically no leave trees had been killed by insect attack

In the Burnam area, which was a small project area completed in June 1934, injury that could be considered of lasting importance was found in the form of nine large groups of infested leave trees. Figure 2 shows part of one of the largest groups. Jeffry pine was infested by Ips oregoni which attacked material from 6 to 30 feet in height. The groups included from 6 to 50 trees. Although, in some cases all trees within the margins of the infested areas were not killed, the infestation resulted in the formation of definitely understocked openings.

It was evident that the broods infesting the standing material attacked at approximately the same time as those which infested the cut material. No later infestations by other broods were found. Several of the groups occurred just below the brow of the slope, a coincidence that may point to non-entomological factors as a cause of the loss.

CONCLUSIONS

1. With the exception of infestations on the Burnam area, which is on the Plumas National Forest, forest insect infestations on the 1934 thinning projects cannot be considered serious.

2. Such losses in standing trees as did occur appeared to result from attraction of insects due to the presence of cut material. It is not apparent that the broods infesting the leave trees emerged from older infestations in the slash.

3. Most of the material cut during the thinning operations was attacked by barkbeetles if it was large enough. For the most part broods resulting from those attacks were not very successful.

4. There does not appear to be any great hazard created by the cutting of small sized reproduction and poles. A hazard does appear to be created by cutting large sized material, particularly if it is felled in a group of trees of similar or larger dimensions.

5. There is an insufficient basis for a conclusion that thinning of the type practiced in Region 5 during 1934 is not hazardous under all conditions. It is conceivable that similar work done under different climatic or stand conditions might result in outbreaks that would have a lasting effect on the thinned stands.

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Berkeley, California.
January 10, 1936.

Figure 1.- Group of leave trees on Lasco Thinning Area, Lassen National Forest killed by Ips and western pine beetle attacks. Large poles (up to 10" D.B.H.) were cut in this group. Apparently attraction to them resulted in the infestation of the standing trees.
Photo # 9714. 9/4/35 K.A.Salman

Figure 2.- Group of nearly fifty poles of all sizes on Burnam Thinning Area, Plumas National Forest that were attacked by Ips. All infested trees were jeffrey pine. Their infestation appeared to be the result of attraction to cut material.
Photo # 9715A 9/6/35 K.A.Salman